



Vertical Innovations in Transport And Logistics over 5G experimentation facilities

PRESS RELEASE #2

“AUTOMATION TECHNOLOGIES FOR LOGISTICS”

The digital transformation entails the implementation of new digital technologies, the utilization of talent and processes to improve business everyday operations and customer satisfaction. The coronavirus crisis has created a new urgency for faster digital transformation as executives look for ways to protect their organizations from future disruptive events. Globalization in T&L and geopolitical uncertainty higher than it has been for many years (UK's departure from the European Union in February 2020, the Ukrainian War, etc.), companies are continually reviewing and adapting their logistics as they seek to balance cost, speed, and risk.

Automation technologies in T&L sector is becoming increasingly common thanks to lower costs, improved capabilities and the availability of products tailored to the unique needs of the industry. In addition, 5G technology is bringing the fifth-generation cellular technology standard with outstanding capabilities (ultra-low latency communications, massive machine-type communication, network slicing, etc.). In logistics, this will enable smart operations and autonomous logistics transport, hyper-connected logistics facilities, and the dynamic setup of new or temporary logistics facilities during seasonal peaks.

Simultaneously, logistics can now adopt once infeasible or cost-prohibitive technology, thanks to important technological breakthroughs in recent years involving sensors, batteries, wireless communication, data storage, computing power, and material sourcing. It is only with these modern advancements that augmenting and automating technologies have become unlocked and accessible to supply chains, opening the door to further developments.

Across the logistics sector, companies need to embrace innovative solutions to help overcome difficulties and maintain operations in the most challenging circumstances. In this sense, the H2020-ICT-41-2020 project **VITAL-5G** “Vertical Innovations in Transport And Logistics over 5G experimentation facilities” takes profit of the added value of 5G connectivity for the European Transport and Logistics (T&L) sector to address key business problems related to internal process improvements, route optimization, cost and inefficiencies at critical hubs in the supply chain such as ports and warehouses.

Started in January 2021, the three years project with 16 partners from 6 European countries and coordinated by WINGS ICT Solutions is funded by the European Commission with a budget of € 4.778 million. Multiple T&L applications will be validated through 3 use cases: 1) Automated

vessel transport, 2) Connectivity and data-enabled assisted navigation using IoT sensing and video cameras, 3) Automation & remote operation of freight logistics (Warehouse logistics).

In the specific context of Automation for T&L, the warehouse logistics use case in Athens will demonstrate the feasibility of applying the 5G technology to the Logistics sector, for optimizing warehousing operations through an integrated state-of-the-art operational system based on Automated Guided Vehicles (AGVs). This system will make use of the OTE 5G-EVE Athens testbed which will be upgraded to 5G Stand-Alone (5G SA) version and extended at the DIAKINISIS warehouse premises. The operation of AGVs can be automated and remotely assisted using HD video streaming functionality to enable human interaction, while additional AI/ML techniques will be introduced for post-processing operational data to improve the end-to-end functionality of the warehouse ecosystem.

The Athens use case targets to demonstrate the “smart warehouse” concept, to face current challenges as: lack of resource efficiency in various warehousing operations, route optimization for order picking considering heterogeneous data sources, and limited availability of remote surveillance and monitoring of processes due to current network limitations.

With the increasing diffusion of augmenting and automating technology into supply chains, workers on facility floors are seeing their tasks transform and new roles emerge. However, despite the acceleration of breakthroughs, we do not foresee for the logistics industry an instant and dramatic shift from human labor to automation. Instead, we see a gradual period of change over 30 years in which more roles will collaborate with technology in the workplace instead of competing with it.

Specifically the project consortium consists of: WINGS ICT Solutions (Greece), BEIA Consult International (Romania), DHL Exel Supply Chain Spain (Spain), Diakinisis S.A. (Greece), Digitrans (Belgium), EBOS Technologies Ltd (Cyprus), Asociatia Tehnopol Galati (Romania), Interuniversitair Micro-Electronica Centrum - IMEC (Belgium), Incelligent IKE (Greece), Inlecom Group (Belgium), Compania De Navigatie Fluviala Romana Navrom (Romania), Nextworks (Italy), Telenet Group (Belgium), Orange Romania (Romania), Hellenic Telecommunications Organization – OTE (Greece) and Seafar (Belgium).

Further information for the project can be found at: <https://www.vital5g.eu/>

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